

Septic Management Database Template Help Document

OVERVIEW

DHEC-OCRM has developed a database template using MS Access. This template is designed to provide a demonstration of the type of management system tracking that might be required for your program. It contains fields for information that comes from DHEC's septic Permit to Construct - Certificate of Final Approval, from the septic inspection form template (found under the Ordinance Templates page of this tool kit), and from assessor's data, your municipal tax records or other municipal or billing records. A sampling of "dummy" data has been included to demonstrate basic functionality, but the database is set up to accept original input. **THIS DATABASE IS FOR DEMONSTRATION PURPOSES. WHILE THE STRUCTURE AND FUNCTIONALITY OF THE DATABASE ARE SIMILAR TO WHAT MIGHT BE FOUND IN A PRODUCTION ENVIRONMENT, ERROR-TRAPPING, SECURITY AND COMMON DATABASE DESIGN PRINCIPLES HAVE BEEN SCALED DOWN TO MINIMIZED DEVELOPMENT TIME.**

You must have MS Access software to utilize and modify this database. We recommend that you download the latest Microsoft Office service pack to avoid any problems utilizing the database. The demonstration database was developed in MS Office XP. To keep and modify the database you need to save it to your hard drive. Should you choose to utilize our database template, but would like assistance in modifying it to better suit your onsite management program, please contact Lisa Hajjar (843-744-5838) at DHEC-OCRM for assistance if you are in the eight coastal counties.

COMPONENTS

This database is made up of tables, queries, forms and reports.

Tables are the data storage components.

SITE : Table									
	SITE_ID	TMS	ST_NUMBER	ST_NAME	CITY	COUNTY	STATE	ZIP	NEI
	5	6666666666	236	Cruz Azul Rd	Hometown	Homecounty	SC	55555	Azi
	11	6363636363	455	Test Street	Somewhere	Somewhere	SC	55555	
	10	9874563210	800	Spartak Rd	Hometown	Homecounty	SC	55555	NA
	6	7777777777	1258	Inter St	Hometown	Homecounty	SC	55555	NA
	3	4444444444	112	Ajax Lane	Hometown	Homecounty	SC	55555	Aja
	1	3333333333	7894	Ajax Lane	Hometown	Homecounty	SC	55555	Aja
	7	9999999999	5632	Blackburn Dr	Hometown	Homecounty	SC	55555	Nor
	8	0101010122	12	Cruz Azul Rd	Hometown	Homecounty	SC	55555	Azi
	4	5555555555	546	Litmanon St	Hometown	Homecounty	SC	55555	Pre
*	(AutoNumber)								

Queries are pre-built search parameters which allow specifically requested data groupings to be supplied to the forms.

MAINT_INSP_QUERY : Select Query

```
SELECT [GENERIC_PARAMETERS].[PARAMETER_VALUE]
FROM GENERIC_PARAMETERS
WHERE ((([GENERIC_PARAMETERS].[PARAMETER_TYPE])='MAINT_INSP_TYPE'));
```

Forms are the interfaces designed to simplify the data viewing, editing, and updating.

frmSITE : Form

TMS Quick Search [] DHEC PERMIT Quick Search []

SITE INFORMATION				SYSTEM INFORMATION	
TMS []				DHEC CODE []	Inspection Form For This Site
ST NUM []	ST NAME []	CITY []	STATE []	DHEC SYSTEM TYPE []	
ZIP []	COUNTY []	NEIGHBORHOOD/SD []		TANK SIZE []	
FACILITY TYPE []	OCCUPANCY TYPE []	BEDROOMS []		TANK MANUFACTURER []	
WATER SUPPLY []	WATER ACCT []	DHEC PERMIT []		MAX BR DESIGN []	
				DAILY FLOW []	
				LOADING RATE []	
				TRENCH NUM []	
				TRENCH MAXIMUM DEPTH []	

OWNER INFORMATION

FIRST NAME [] ADDRESS 1 []

Reports are printable documents that are designed to interface with database tables and forms. When opened, the reports pull the appropriate data to populate the pre-built report format. In the case of this database, the Inspection Form is the only report included.

TEST_REPORT

INSPECTION FORM FOR OPERATING SEPTIC SYSTEMS

TYPE INSPECTION: ☐ Baseline ☐ Sale of Proper ☐ Schedule ☐ Investigation ☐ Followup

Inspect Date [] Time [] Weather []

Inspector Name And Company []

Pumper Name And Company []

Others Present During Inspection []

Property Owner At Time Of Inspect Chris Wilson Williams

Site Address 7894 Ajax Lane

Tax Map Number 333333333 DHEC Permit Number 100-0025

DHEC System Code 260-741 System Type Erwirochamber 17 Conv Pump

SITE OBSERVATIONS

Property In Use ☐ Yes ☐ No Occupancy Type ☐ Full-time ☐ Vacation Rental ☐ Other ☐ Unknown

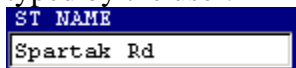
GENERAL SITE CONDITIONS:

These tables, queries, forms and reports are all editable, but structural changes to these components, especially the forms, can cause the automated components of the database to malfunction.

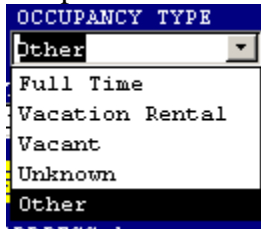
We will briefly cover tables and queries, but the primary focus of this document will be the use of forms. In discussing the forms, we'll make reference to a number of components of the forms. Let's cover them briefly.

Screens – This term will be used as the primary descriptor of the forms themselves.

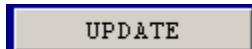
Text Boxes – This is a simple data entry component designed to contain text or numbers typed by the user.

A screenshot of a text box with a blue header bar containing the text 'ST NAME' in white. Below the header is a white text input field with a thin blue border, containing the text 'Spartak Rd'.

Dropdowns – These components hold data and values pulled directly from database tables and/or queries. These components are used to simplify data input and to ensure that only valid values are input for specific fields of the database tables. Dropdown boxes look similar to text boxes, but feature a down arrow on the right-side of the component. When clicked, the box expands to show all valid values.

A screenshot of a dropdown menu with a blue header bar containing the text 'OCCUPANCY TYPE' in white. The dropdown is open, showing a list of options: 'Other', 'Full Time', 'Vacation Rental', 'Vacant', 'Unknown', and 'Other'. The 'Other' option at the top is highlighted with a blue background.

Buttons – These components are used to launch screens (forms), print records or cause actions such as the editing, updating or deleting of records within the database tables.

A screenshot of a button with a blue border and a light gray background. The button contains the text 'UPDATE' in blue, centered.

Check Boxes – These components are linked to table fields in which YES/NO or TRUE/FALSE are the only valid values. If checked, then YES or TRUE is the value. If not checked, then NO or FALSE is the value.

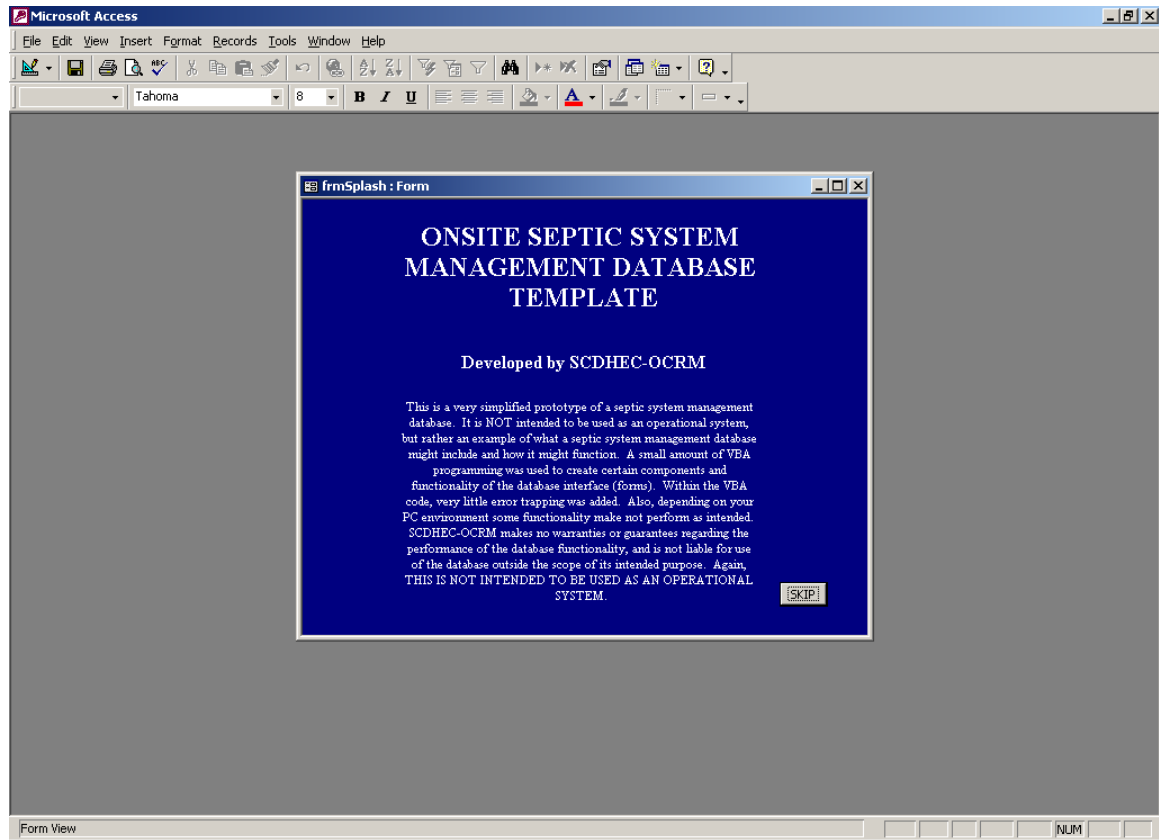
A screenshot of a checkbox with a blue header bar containing the text 'WELL INSTALLED' in white. To the right of the header is a small white square checkbox, which is currently unchecked.

Now that we've covered some of the key terms, let's get started.

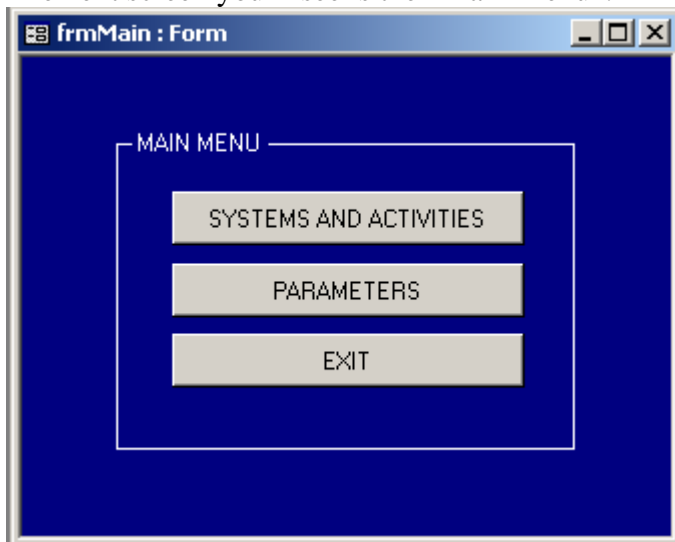
USING THE DATABASE

The first step is to copy the database to your PC. Then open it by double-clicking.

When the database is first opened, you will first see the “Splash” screen. Read the comments carefully. This screen has a timer which will close the screen and open the “Main Menu” screen. If you’ve finished reading the comments or for subsequent uses, just use the “SKIP” button to move past the “Splash” screen.



The next screen you'll see is the "Main Menu".

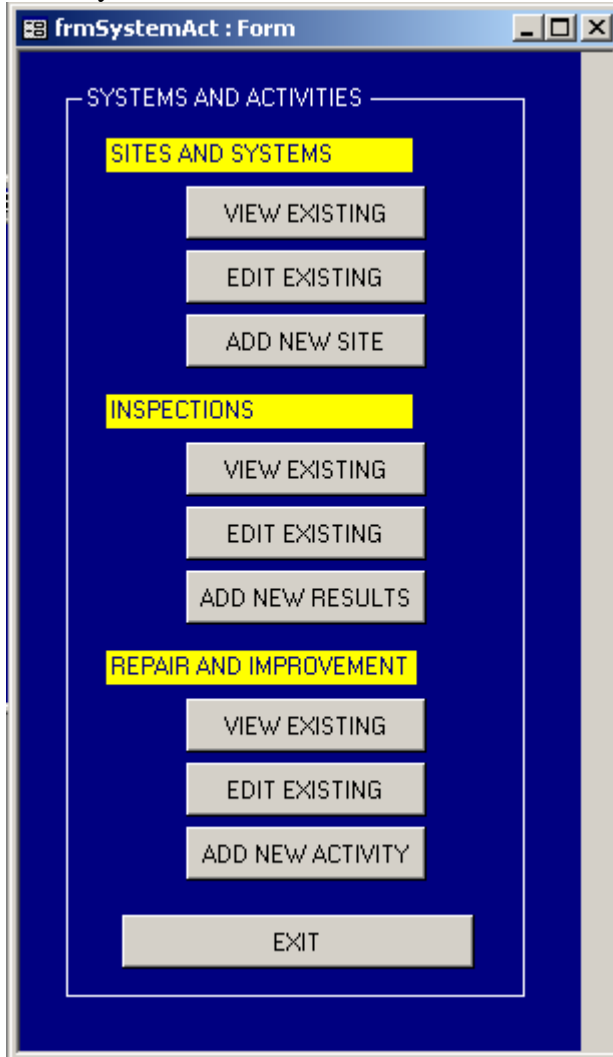


This screen features three buttons:

- 1) SYSTEMS AND ACTIVITIES
- 2) PARAMETERS
- 3) EXIT

SYSTEMS AND ACTIVITIES

Below you'll see the "SYSTEMS AND ACTIVITIES" menu. It features three sections:

The image shows a screenshot of a software window titled "frmSystemAct : Form". The window has a dark blue background and a white border. Inside the window, there is a white rectangular area containing the text "SYSTEMS AND ACTIVITIES" at the top. Below this text, there are three sections, each with a yellow header and three buttons. The first section is "SITES AND SYSTEMS" with buttons "VIEW EXISTING", "EDIT EXISTING", and "ADD NEW SITE". The second section is "INSPECTIONS" with buttons "VIEW EXISTING", "EDIT EXISTING", and "ADD NEW RESULTS". The third section is "REPAIR AND IMPROVEMENT" with buttons "VIEW EXISTING", "EDIT EXISTING", and "ADD NEW ACTIVITY". At the bottom of the white area, there is a single button labeled "EXIT".

- 1) **SITES AND SYSTEMS** – This screen is set to view and edit information about a site such as TMS, Address, Owner information, and specifics about the configuration of the septic system.
- 2) **INSPECTIONS** – This screen is for viewing and input of inspection information.
- 3) **REPAIR AND IMPROVEMENT** – This screen is for viewing and input of repairs and improvements to existing septic systems. It is not tied to system information stored in the SITE screen/table. It's designed primarily for activity tracking.

All three of these sections (SITES AND SYSTEMS, INSPECTIONS and REPAIR AND IMPROVEMENT) function in essentially the same manner. Therefore, we will cover the basic functionality and operation by examining the SITES AND SYSTEMS section. We will not go into detail for INSPECTIONS and REPAIR AND IMPROVEMENT.

However, screen shots will be shown.

SITES AND SYSTEMS

There are three menu options under SITES AND SYSTEMS:

- 1) VIEW EXISTING
- 2) EDIT EXISTING
- 3) ADD NEW SITE

These three options function essentially the same way. There are two primary differences. First, the VIEW EXISTING screen allows for the printing of Inspection forms. The EDIT and ADD NEW screens do not. Second, the EDIT and ADD NEW screens feature dropdown boxes containing valid values which allow for quick edit and data input.

VIEW EXISTING

The screenshot displays the 'frmSITE : Form' window, which is divided into several sections for data entry. At the top, there are two search fields: 'TMS Quick Search' and 'DHEC PERMIT Quick Search'. Below these, a dropdown menu is open, showing a list of TMS numbers (6666666666, 6363636363, 9874563210, 7777777777, 4444444444, 3333333333, 9999999999, 0101010122). The form is organized into four main sections, each with a yellow header: 'SITE INFORMATION', 'SYSTEM INFORMATION', 'OWNER INFORMATION', and 'INSTALLATION INFORMATION'. The 'SITE INFORMATION' section includes fields for ST NUM, ST NAME, STATE, ZIP, COUNTY, HOOD/SD, FACILITY TYPE, OCCUPANCY TYPE, BEDROOMS, WATER SUPPLY, WATER ACCT, and DHEC PERMIT. The 'SYSTEM INFORMATION' section includes fields for DHEC CODE, DHEC SYSTEM TYPE, TANK SIZE, TANK MANUFACTURER, MAX BR DESIGN, DAILY FLOW, LOADING RATE, TRENCH NUM, TRENCH MAXIMUM DEPTH, AVERAGE TRENCH WIDTH, TOTAL TRENCH LENGTH, AGGREGATE TYPE, AGGREGATE DEPTH, WELL INSTALLED, PUMP TANK, AS BUILTS ON FILE, BASELINE INSPECT, BASELINE DATE, MAINT INSPECT TYPE, and NEXT SCHEDULED. The 'OWNER INFORMATION' section includes fields for FIRST NAME, ADDRESS 1, MIDDLE NAME, ADDRESS 2, LAST NAME, and PHONE. The 'INSTALLATION INFORMATION' section includes fields for INSTALL, INSTALLER, INSPECTION, LONGITUDE (X COORD), LOCATION TEXT, LATITUDE (Y COORD), and a large text area for additional notes.

You can view site information by choosing either a TMS number from the “TMS Quick Search” or a DHEC permit number from “DHEC PERMIT Quick Search”.

EDIT EXISTING

frmSITE_E:Form

TMS Quick Search 777777777 DHEC PERMIT Quick Search 100-0029

SITE INFORMATION				SYSTEM INFORMATION	
TMS 777777777				DHEC CODE 360-131	
ST NUM	ST NAME	CITY	STATE	DESIGN CODE	
1258	Inter St	Hometown	SC	EZFlow 3x12 Triang 24 Trench Pump	
ZIP	COUNTY	NEIGHBORHOOD/SD		TANK SIZE	1000
55555	Homecounty	NA		TANK MANUFACTURER	Tank World
FACILITY TYPE	OCCUPANCY TYPE	BEDROOMS		MAX BR DESIGN	3
Mobile Home	Full Time	3		DAILY FLOW	360
WATER SUPPLY	WATER ACCT	DHEC PERMIT		LOADING RATE	.6
Private	HT1200114	100-0029		TRENCH NUM	2
OWNER INFORMATION				TRENCH MAXIMUM DEPTH	26
FIRST NAME	ADDRESS 1			AVERAGE TRENCH WIDTH	36
Joseph	1258 Inter St			TOTAL TRENCH LENGTH	
MIDDLE NAME	ADDRESS 2			AGGREGATE TYPE	Tire Chips
Wilson	Hometown, SC 55555			AGGREGATE DEPTH	6
LAST NAME	PHONE			WELL INSTALLED	<input checked="" type="checkbox"/>
Lane	555-555-1195			PUMP TANK	<input checked="" type="checkbox"/>
INSTALLATION INFORMATION				AS BUILTS ON FILE	<input checked="" type="checkbox"/>
INSTALL	INSTALLER	INSPECTION		BASLINE INSPECT	<input type="checkbox"/>
2/2/2002	Septic World, Inc	2/4/2002		BASLINE DATE	
LONGITUDE (X COORD)	LOCATION TEXT			MAINT INSPECT TYPE	NEXT SCHEDULED
6666667				FIVE YEAR	5/5/2006
LATITUDE (Y COORD)					
666667					
UPDATE				DELETE SITE	

You begin using the EDIT screen in the same manner as the VIEW screen. Choose either a TMS or DHEC permit number from the quick search dropdowns. Items such as “Facility Type”, “Occupancy Type”, “DHEC Code”, etc. appear as dropdowns. These dropdowns have predefined valid values which are pulled from parameter tables. We’ll get into how to edit parameter values later. To edit site information, simply choose a site, make the necessary changes, and click the “Update” button at the bottom of the screen.

You can also remove a site by choosing it using the “Quick Search” options and clicking the “Delete Site” button. The delete cannot be undone, so be careful.

ADD NEW SITE

frmSITE_N:Form

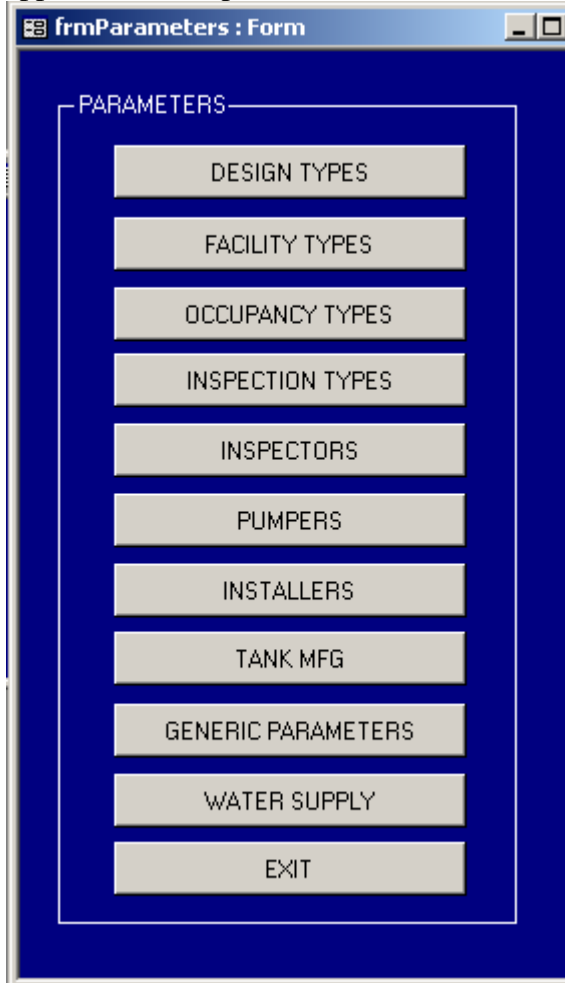
SITE INFORMATION				SYSTEM INFORMATION	
TMS <input type="text"/>				DHEC CODE <input type="text"/>	
ST NUM <input type="text"/>	ST NAME <input type="text"/>	CITY <input type="text"/>	STATE <input type="text"/>	DESIGN CODE <input type="text"/>	
ZIP <input type="text"/>	COUNTY <input type="text"/>	NEIGHBORHOOD/SD <input type="text"/>		TANK SIZE <input type="text"/>	
FACILITY TYPE <input type="text"/>	OCCUPANCY TYPE <input type="text"/>	BEDROOMS <input type="text"/>		TANK MANUFACTURER <input type="text"/>	
WATER SUPPLY <input type="text"/>	WATER ACCT <input type="text"/>	DHEC PERMIT <input type="text"/>		MAX BR DESIGN <input type="text"/>	
OWNER INFORMATION				DAILY FLOW <input type="text"/>	
FIRST NAME <input type="text"/>	ADDRESS 1 <input type="text"/>			LOADING RATE <input type="text"/>	
MIDDLE NAME <input type="text"/>	ADDRESS 2 <input type="text"/>			TRENCH NUM <input type="text"/>	
LAST NAME <input type="text"/>	PHONE <input type="text"/>			TRENCH MAXIMUM DEPTH <input type="text"/>	
INSTALLATION INFORMATION				AVERAGE TRENCH WIDTH <input type="text"/>	
INSTALL <input type="text"/>	INSTALLER <input type="text"/>	INSPECTION <input type="text"/>		TOTAL TRENCH LENGTH <input type="text"/>	
LONGITUDE (X COORD) <input type="text"/>	LOCATION TEXT <input type="text"/>			AGGREGATE TYPE <input type="text"/>	
LATITUDE (Y COORD) <input type="text"/>				AGGREGATE DEPTH <input type="text"/>	
				WELL INSTALLED <input type="checkbox"/> PUMP TANK <input type="checkbox"/>	
				AS BUILTS ON FILE <input type="checkbox"/>	
				BASELINE INSPECT <input type="checkbox"/> BASELINE DATE <input type="text"/>	
				MAINT INSPECT TYPE <input type="text"/> NEXT SCHEDULED <input type="text"/>	
ADD					

The ADD NEW SITE screen is where new sites are added to the database. The same dropdown options present on the EDIT screens are present, but no “Quick Search” options are available because you’re adding a *NEW* site. When the site information data is completely entered, simply click the “Add” button at the bottom of the screen and the database will be updated.

[illegible]

PARAMETERS

The purpose of the PARAMETERS menu is to allow the user to edit the values that appear in the dropdowns on the screens under the SYSTEMS AND ACTIVITIES menu.

The image shows a screenshot of a software window titled "frmParameters : Form". The window has a dark blue background. Inside, there is a white rectangular area with the title "PARAMETERS" at the top left. Below this title, there is a vertical list of ten light gray rectangular buttons, each containing a parameter category name in black, uppercase text. The buttons are stacked vertically with small gaps between them. The categories listed from top to bottom are: DESIGN TYPES, FACILITY TYPES, OCCUPANCY TYPES, INSPECTION TYPES, INSPECTORS, PUMPERS, INSTALLERS, TANK MFG, GENERIC PARAMETERS, and WATER SUPPLY. At the bottom of the list is an "EXIT" button. The window also features standard Windows-style window controls (minimize, maximize, close) in the top right corner.

You'll notice that all the options that appear above correspond to one or more dropdowns that appear on the SITE, INSPECTIONS and REPAIR IMPROVEMENT screens, with exception of the "Generic Parameters" option. "Generic Parameters" is just what it says; parameters that have no specific category and/or do not require a separate table, but were necessary for use in one or more dropdowns.

For instance, if you want to add a new "Occupancy Type" to the dropdown menu that appears on the SITE screens, this is where the addition would have to be made.

All of the screens associated with these options are MS Access generated forms. They look and function differently than the screens under SYSTEMS AND ACTIVITIES, which were designed independently.

We'll use the "Occupancy Types" as an example.

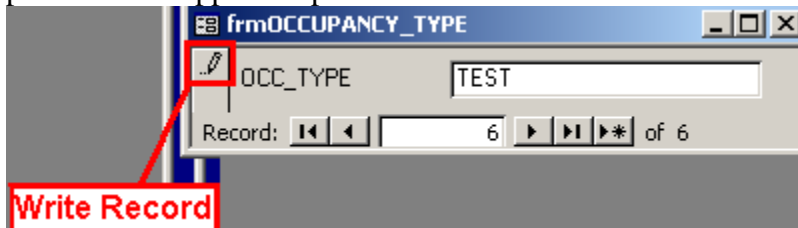


This screen allows you to edit the values that appear in the Occupancy Type dropdown. You'll notice in the screen shot above that there are five records. You use the left/right arrows to navigate through the values.

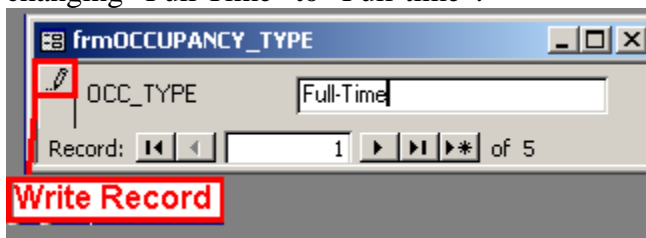
In order to add a new value, click the button showing the >*.



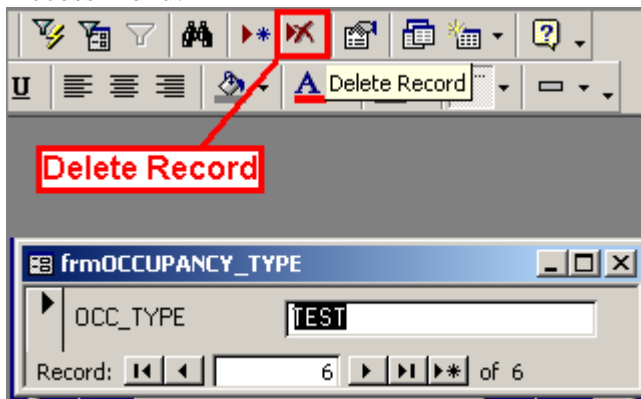
This will clear the text box. You then type in the new value and click the button with the pencil on the upper left portion of the screen. This will write the record.



This option would also be used if you were editing an existing value. For instance, changing "Full Time" to "Full-time".



To remove a value, you'll need to navigate to the record using the left/right arrows. Once you're at the value you want remove, you will click the Delete button on the main MS Access menu.

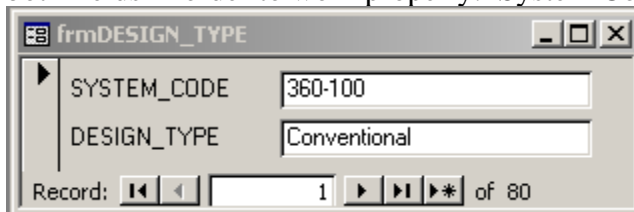


The value will be deleted, and not appear in the Occupancy Type dropdown on the SITE screen.

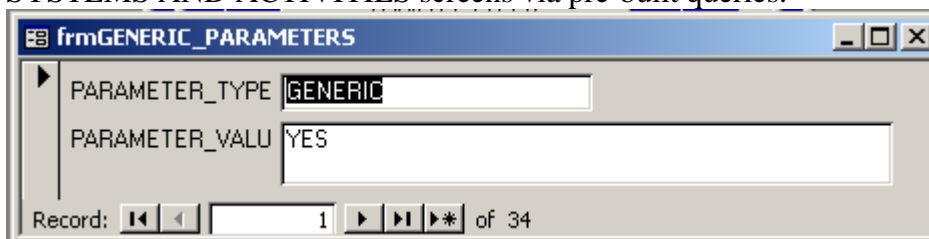
All the screens under the PARAMETER menu operate in this manner. The screens you most likely will edit are Inspectors, Pumpers, Installers, and Tank Manufacturers.

Some of the PARAMETER screens contain more than one field. Here are two examples.

“Design Types” has two fields, so adding a new value would require the completion of both fields in order to work properly: System Code and Design Type.



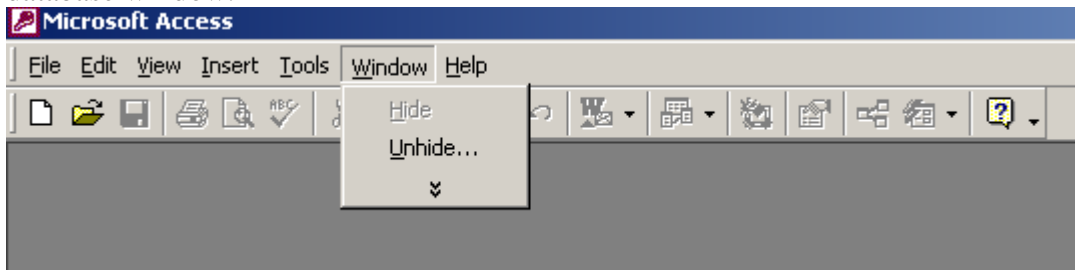
The second example is a little more complicated. “Generic Parameters” also has two fields, but this particular screen represents a table in which the values are brought to the SYSTEMS AND ACTIVITIES screens via pre-built queries.



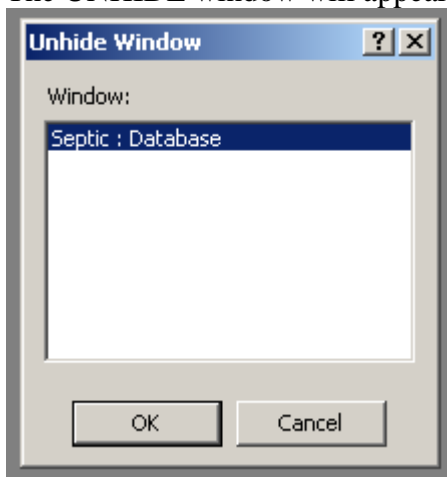
The PARAMETER_TYPE text box identifies which query the corresponding value is associated with. Editing of these values requires familiarity with the GENERIC PARAMETERS table and associated queries.

DATABASE TABLES, QUERIES, FORMS AND REPORTS

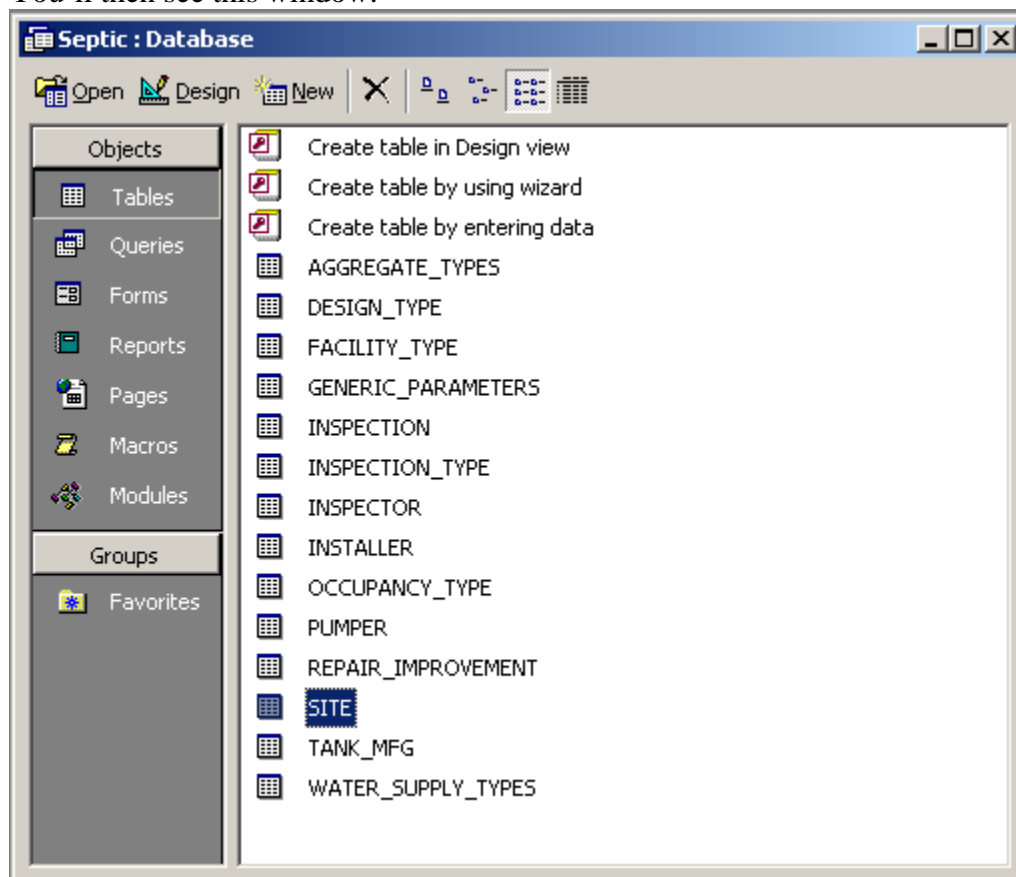
Before being able to view the actual tables and queries, you'll need to "UNHIDE" the database window.



The UNHIDE window will appear, and you'll choose the Septic database.



You'll then see this window.

















From this window you can view all tables, queries, forms and reports contained in this database.













WARNING: CHANGES TO THE STRUCTURE OF ANY OF THESE COMPONENTS CAN RESULT IN A MALFUNCTION OF SCREEN FUNCTIONALITY.

If you want to close this window, you must “HIDE” the window using the same procedure used to “UNHIDE” it. If you simply click the “X” in the top corner of the window, it will close the database and all tables, queries, forms or reports you have open and you will lose all unsaved data.























TABLES

	AGGREGATE_TYPES
	DESIGN_TYPE
	FACILITY_TYPE
	GENERIC_PARAMETERS
	INSPECTION
	INSPECTION_TYPE
	INSPECTOR
	INSTALLER
	OCCUPANCY_TYPE
	PUMPER
	REPAIR_IMPROVEMENT
	SITE
	TANK_MFG
	WATER_SUPPLY_TYPES





QUERIES

	DESIGN_TYPE_Query
	DHEC_STAT_Query
	GENERIC_Query
	INSP_REP_Query
	INSP_STAT_Query
	LIQ_OP_LEVEL_Query
	MAINT_INSP_QUERY
	PONDING_Query
	PROT_BARRIERS_Query
	SD_SP_WATER_TYPE_Query
	SITE_Query
	STREAM_FLOW_Query

FORMS

 frmAGGREGATE_TYPES	 frmREP_IMP_E
 frmDESIGN_TYPE	 frmREP_IMP_N
 frmFACILITY_TYPE	 frmSITE
 frmGENERIC_PARAMETERS	 frmSITE_E
 frmINSPECT	 frmSITE_N
 frmINSPECTION_TYPE	 frmSplash
 frmINSPECTOR	 frmSystemAct
 frmINSPECT_E	 frmTANK_MFG
 frmINSPECT_N	 frmWATER_SUPPLY_TYPES
 frmINSTALLER	
 frmMain	
 frmOCCUPANCY_TYPE	
 frmParameters	
 frmPUMPER	
 frmREP_IMP	

REPORTS

 BLANK_INSPECTION
 GRID2
 POP_INSPECTION
 TEST_REPORT

MOVING FORWARD

If you are comfortable working with MS Access, modifying this database to suit your particular environment or to meet the requirements of your program is encouraged. Additional tables, queries, forms and reports can be added without disrupting the existing functionality. This database can also be interfaced with your own existing databases.

Beyond simple additions, you might be inclined to keep the basic structure of the database tables, but build your own queries, forms and reports. This database uses VBA (Visual Basic for Applications) to create much of the functionality. However, MS Access has a number of “Wizards” to assist the user in creating their own customized components. Having a working knowledge of VBA will only expand these possibilities.

Finally, the basic structure of these database tables can be applied to other database systems such as MS SQL Server or Oracle.

As stated in the beginning of this document, the primary goal of this database is to introduce you to the possibility of using a database to help manage your septic management system.